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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,770	12/12/2003	Kun-Hee Suh	7337	8737
39196	7590	06/26/2007	EXAMINER	
SHLESINGER, ARKWRIGHT & GARVEY LLP			KEMMERLE III, RUSSELL J	
1420 KING STREET				
SUITE 600			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314			1731	
			MAIL DATE	DELIVERY MODE
			06/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/733,770	SUH, KUN-HEE	
<b>Examiner</b>	<b>Art Unit</b>		
Russell J. Kemmerle	1731		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 April 2007.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

In view of the amendment filed on 20 April 2007 the objection to the drawings is withdrawn.

### ***Specification***

As per the applicant's request the objections to the specification with regard to formalities (including use of the term "noninflammable" and related words) will be held in abeyance until the indication of allowable subject matter.

### ***Claim Rejections - 35 USC § 112***

In view of the amendment filed on 20 April 2007 the rejection of claim 3 under 35 USC §112 second paragraph is withdrawn.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Billwiller (0,831,321).

Billwiller discloses forming an insulating block by creating an aqueous paste of water, magnesium oxide and vegetable fiber, and pressing that paste in order to obtain the desired shape of the block (Claim 6, Col 1 lines 24-25).

Thus, Billwiller discloses or reasonably suggests every limitation of claim 5, and thus anticipates the claim.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billwiller in view Ghosh (6,649,436).

Billwiller is relied upon as discussed above.

Billwiller does not disclose the method of creating an insulating piece where the aqueous paste is formed into the final product by applying pressure in a mold that has been heated.

Ghosh discloses creating a piece from a ceramic/organic mixture involving placing the mixture into a die and applying pressure, with the die being heated before or during the pressure being applied (Col 13 lines 17-31).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant to have combined the method disclosed by Billwiller of creating an aqueous paste of water, magnesium oxide and vegetable fiber with the method taught by Ghosh of forming a ceramic/organic mixture into a final piece by applying pressure through a mold at an elevated temperature, since Ghosh discloses that this is an effective method for creating a desired final product, and that the increased temperature during pressing can provide increased densification (Col 8 lines 30-33).

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billwiller in view of Suh (4,548,773).

Billwiller is relied upon as discussed above.

Billwiller does not disclose the method of creating an insulating piece where the aqueous paste is formed into the final product by injection molding and heating the injection mold.

Suh discloses a device that can be used for injection molding a ceramic material to create a desired final shape where the mold includes heating means to increase the temperature of the mold while the ceramic article is being formed (Col 1, lines 7-17, Col 3 lines 56-58).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have combined the method disclosed by Billwiller of creating an aqueous paste of water, magnesium oxide and vegetable fiber with the method taught by Suh of injection molding a ceramic material in a mold containing means for heating the mold since Suh discloses that this is an effective means for forming a ceramic article.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billwiller in view of Takahasi (4,764,102).

Billwiller is relied upon as discussed above.

Billwiller does not disclose the method of creating an insulating piece where the aqueous paste is formed into the final product by extruding the paste and passing it through a heating device positioned at the outlet of the extruder.

Takahashi discloses a method of forming a ceramic article where a ceramic material is extruded to form the desired shaped, and the extruded ceramic article is

passed through a dryer and a firing furnace positioned at the outlet of the extruder (Abstract).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have combined the method disclosed by Billwiller of creating an aqueous paste of water, magnesium oxide and vegetable fiber with the method taught by Takahashi by extruding the aqueous paste and passing it through a heating device positioned at the outlet of the extruder since Takahashi discloses that this is an effective way of forming a ceramic article.

#### ***Response to Arguments***

Applicant's arguments filed 20 April 2007 have been fully considered but they are not persuasive.

Addressing applicant's arguments regarding claim 5:

First, it should be noted, that claim 5 is a product-by-process claims, and as such, determination of patentability is based on the product formed, and is not limited to products formed by the process described. See *In re Thorpe*, 777 F.2d 695, 698; 227 USPQ 964, 966 (Fed. Cir. 1985) ("[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (Citations omitted))

Applicant argues that the insulating blocks of Billwiller must be impregnated with a mineral oil. Billwiller teaches that impregnating the brick with a mineral oil is possible, but also teaches that this is an optional step, and is not necessary to obtain the desired final product (page 1 line 109 – page 2 line 5, also compare claims 7-9 with claims 10-12).

Applicant further argues that the blocks of claim 5 would have a fine and close inner structure due to the compression at a high temperature and under high pressure, which would not be present in the bricks of Billwiller due to Billwiller not subjecting the bricks to compression and heating during forming. Since Billwiller performs the molding operation at a higher pressure ( $400 \text{ kg/cm}^2$  compared to 10 to  $250 \text{ kg/cm}^2$  in the current invention) and for a longer period of time than the current invention, the lower temperature would be accounted for by the higher pressure and longer molding time and Billwiller would still produce an article having a fine and close inner structure.

Addressing applicant's arguments regarding claims 1 and 2:

Applicant argues that Ghosh is not applicable to the current invention, arguing that methods of molding a product in a molding machine should be differentiated from each other depending on the type/state of the material(s) and the desired final product.

It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, Ghosh is directed to a method of forming a final product made of ceramic. One of ordinary skill in the art would have been motivated to look at all known method of forming ceramic articles in making the product of Billwiller. The fact that Ghosh was directed to a different material and to a different final product would not have deterred one of ordinary skill from using it to make the product of Billwiller.

Addressing applicant's arguments regarding claim 3:

Applicant argues that Suh is contrary to the current invention, arguing that Suh teaches a method of injection molding where the injected material is heated to maintain flowability and later cooled to solidify, whereas the current invention requires heat and pressure at a high temperature for rapid hardening.

Suh discloses a method of injection molding a ceramic article, which includes as part of it a heater in the mold assembly. The heater of Suh is helpful in creating the final hardened piece, and thus would motivate one of ordinary skill in the art to use an injection molding system with a heater to create the product of Billwiller.

Addressing applicant's arguments regarding claim 4:

Applicant argues that Takahashi does not mention a method or system wherein compressing and heating are simultaneously performed during extruding. Applicant further argues that the heating of Takahashi is different than in the current invention.

Current claim 4 does not require that the material undergo compressing and heating simultaneously, instead claim 4 requires only extruding the wet admixture, and then passing the extruded produce through a heating device positioned before an outlet of the extruder.

This limitation is met by Takahashi, which discloses that the material is extruded and passed into a heating device (shown in Fig 2 as **108**). Further, Takashi discloses using heating zones at temperatures ranging from 20°C to 1350°C (Col 4 lines 20-57), which would include temperatures for burning off binder found in the extruded body.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell J. Kemmerle whose telephone number is 571-272-6509. The examiner can normally be reached on Monday through Friday, 8:30-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RJK/



STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700